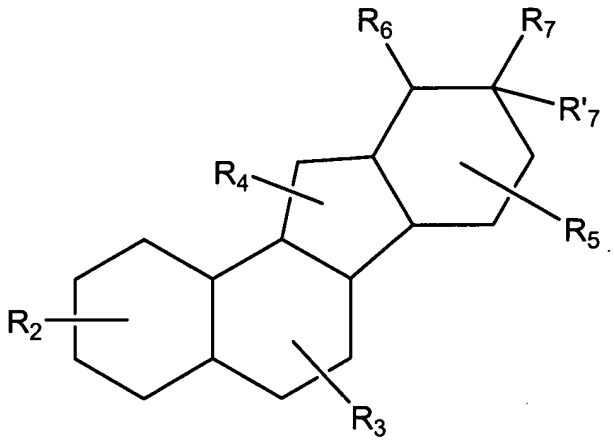
AMENDMENTS TO THE CLAIMS

1-37. (cancelled)

38. (currently amended) A method for inhibiting mitotic cell proliferation in an animal, wherein the mitotic cell proliferation is associated with a cancer, comprising administering to the animal a purified compound represented in the general formula (I), or unsaturated forms thereof, or pharmaceutically acceptable salts thereof:



Formula I

wherein, as valence permits,

R_2, R_3, R_4, and R_5 independently for each occurrence, represent one or more substituents selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_6 is absent or is selected from halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

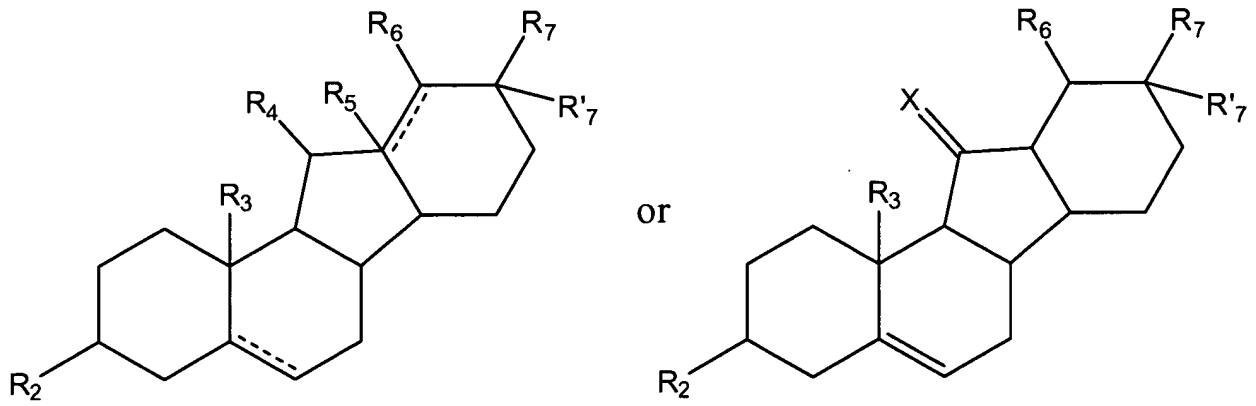
R_7 and R'_7, taken together <u>with the carbon atom to which they are attached</u>, form a <u>furo[3,2-b]piperidine</u> ring <u>system, wherein the carbon atom to which R_7 and R'_7 are attached is the carbon atom at the 2-position of the furo[3,2-b]piperidine ring system</u> ~~or polycyclic ring~~;

~~with the proviso that at least one of R_6, R_7, or R'_7 includes a primary or secondary amine;~~

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle; and

m is an integer in the range 0 to 8 inclusive.

39. (currently amended) A method for inhibiting mitotic cell proliferation in an animal, wherein the mitotic cell proliferation is associated with a cancer, comprising administering to the animal a purified compound represented in the general formula (II), or unsaturated forms thereof, or pharmaceutically acceptable salts thereof:



Formula II

wherein, as valence permits,

R_2 and R_4, independently for each occurrence, are selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_3, independently for each occurrence, is selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_5, independently for each occurrence, is absent or represents a substituent selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, alkoxyl, silyloxy, amino, nitro, thiol,

amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_6 is absent or is selected from halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_7 and R'_7, taken together with the carbon atom to which they are attached, form a furo[3,2-b]piperidine ring system, wherein the carbon atom to which R_7 and R'_7 are attached is the carbon atom at the 2-position of the furo[3,2-b]piperidine ring system ~~or polycyclic ring~~;

~~with the proviso that at least one of R_6, R_7, or R'_7 includes a primary or secondary amine;~~

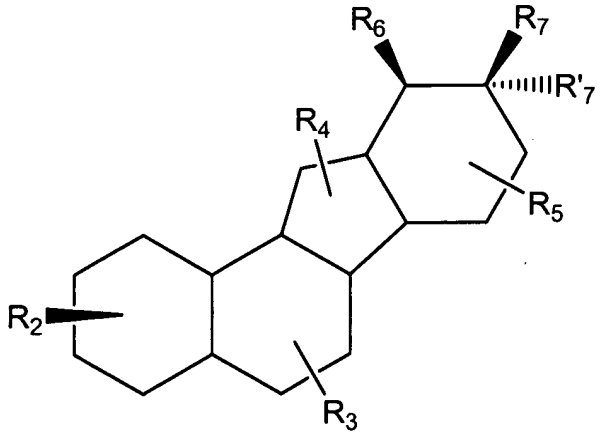
R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

X represents O or S; and

m is an integer in the range 0 to 8 inclusive.

40-41. (cancelled)

42. (currently amended) The method of claim 38, wherein the compound is represented in Formula (Ia), or unsaturated forms thereof, or pharmaceutically acceptable salts thereof:



Formula Ia

wherein, as valence permits,

R_2, R_3, R_4, and R_5 independently for each occurrence, represent one or more substituents selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_6 is absent or is selected from halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

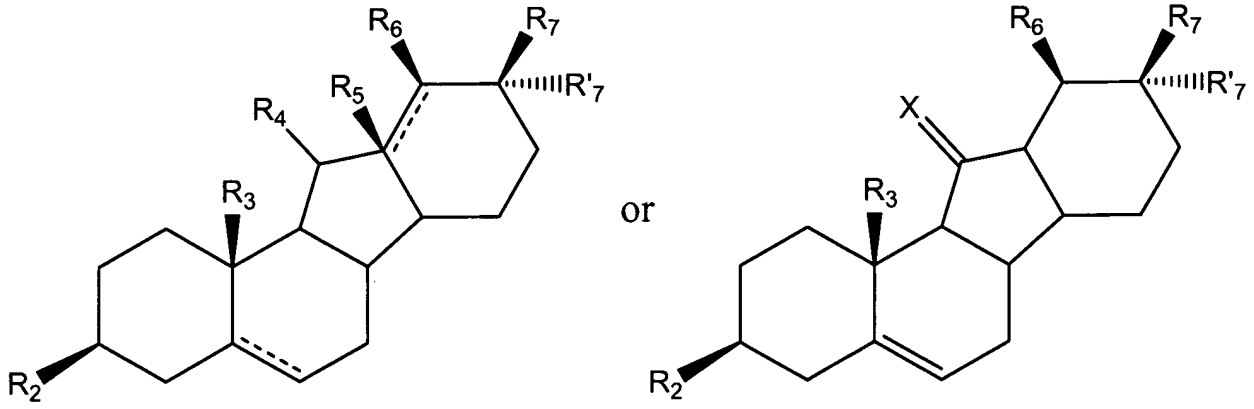
R_7 and R'_7, taken together with the carbon atom to which they are attached, form a furo[3,2-b]piperidine ring system, wherein the carbon atom to which R_7 and R'_7 are attached is at the carbon atom the 2-position of the furo[3,2-b]piperidine ring system ~~or polycyclic ring~~;

~~with the proviso that at least one of R_6, R_7, or R'_7 includes a primary or secondary amine;~~

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle; and

m is an integer in the range 0 to 8 inclusive.

43. (currently amended) The method of claim 39, wherein the compound is represented in Formula (IIa), or unsaturated forms thereof, or pharmaceutically acceptable salts thereof:



Formula IIa

wherein, as valence permits,

R_2 and R_4, independently for each occurrence, are selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines,

imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_3, independently for each occurrence, are selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_5, independently for each occurrence, is absent or is selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_6 is absent or is selected from halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_7 and R'_7, taken together with the carbon atom to which they are attached, form a furo[3,2-b]piperidine ring system, wherein the carbon atom to which R_7 and R'_7 are attached is the carbon atom at the 2-position of the furo[3,2-b]piperidine ring system ~~or polycyclic ring~~;

~~with the proviso that at least one of R_6, R_7, or R'_7 includes a primary or secondary amine;~~

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

X represents O or S; and

m is an integer in the range 0 to 8 inclusive.

44. (previously presented) The method of any one of claims 38-39, wherein the compound is administered topically.

45. (previously presented) The method of any one of claims 38-39, wherein R_2 and R_3, independently for each occurrence, are –OH, alkyl, -O-alkyl, -C(O)-alkyl, or $-C(O)-R_8$.

46. (previously presented) The method of any one of claims 38-39, wherein R_4, independently for each occurrence represents –OH, =O, alkyl, -O-alkyl, -C(O)-alkyl, or –C(O)-R_8.

47. (previously presented) The method of any one of claims 38-39, wherein R_6 is selected from hydrogen, alkyls, alkenyls, alkynyls, amines, imines, amides, carbonyls, carboxyls, carboxamides, ethers, thioethers, esters, or -$(CH_2)_m$-R_8.

48. (currently amended) The method of any one of claims 38-39, wherein R_7[[,]] and R'_7, taken together with the carbon atom to which they are attached, form a ~~furanopiperidine, a~~ perhydrofuro[3,2-b]pyridine~~, a pyranopiperidine, a quinoline, an indole, a pyranopyrrole, a naphthyridine, a thiofuranopiperidine, or a thiopyranopiperidine~~.

49. (previously presented) The method of any one of claims 38-39, wherein the compound inhibits *hedgehog*-mediated signal transduction with an ED_{50} of 1 mM or less.

50. (previously presented) The method of any one of claims 38-39, wherein the compound inhibits *hedgehog*-mediated signal transduction with an ED_{50} of 1 μM or less.

51. (previously presented) The method of any one of claims 38-39, wherein the compound inhibits *hedgehog*-mediated signal transduction with an ED_{50} of 1 nM or less.

52. (previously presented) The method of any one of claims 38-39, wherein the cancer is a basal cell carcinoma, medulloblastoma, squamous cell carcinoma, carcinosarcoma, adenocystic carcinoma, epidermoid carcinoma, nasopharyngeal carcinoma, renal cell carcinoma, papilloma, or an epidermoidoma.

53. (previously presented) The method of claim 52, wherein the cancer is a basal cell carcinoma.

54. (previously presented) The method of claim 52, wherein the cancer is medulloblastoma.

55. (previously presented) The method of any one of claims 38-39, wherein the compound is jervine or cyclopamine.

56. (currently amended) The method of any one of claims 38-39, wherein the furo[3,2-b]piperidine ring system ~~or polycyclic ring formed by R_7 and R'_7,~~ is substituted with one or more halogen, alkyl, aralkyl, alkenyl, alkynyl, cycloalkyl, hydroxyl, amino, nitro, sulfhydryl, imino, amido, phosphate, phosphonate, phosphinate, carbonyl, carboxyl, silyl, ether, alkylthio, sulfonyl, ketone, aldehyde, ester, heterocyclyl, aromatic or heteroaromatic moieties, $-CF_3$, or -CN.